

MISSOURI. Conservationist

VOLUME 72, ISSUE 6, JUNE 2011 • SERVING NATURE & YOU



[NOTE TO OUR READERS]

The Joys of Fishing in Missouri

The midsummer night was alive with the sounds of that time of year. The moon was full and bright, and the night air was an intoxicating blend of smells of the season. It was one of those nights it felt good

to be alive and well in southern Missouri and about to embark on a wade-fishing trip. You might ask yourself, "A wade-fishing trip in the middle of the night?" That was the same question I asked myself when my good friend and fellow forester said, "let's go jitterbugging."

As it turned out, it was a night full of adventure and has been one of those special fishing trip memories of my lifetime.

The objective was to use the light of the full moon to wade the wide pools on the river, tossing a jitterbug into the blackness and slowly reeling in the lure. The musical wobble of the jitterbug coupled with singing cicadas, crickets and the occasional hoot of a screech owl made the trip memorable. However, the fun had just begun. After a few tosses of the lure, the usual wobble was soon followed by a slap-slap on the water and a hard tug on the line. The fight was on! The largemouth bass jumped a few times, returning to the water before I could reel the fish to my side.

My fishing buddy and I spent the remainder of the night working our way through the pools of water. Fortunately, we had waded this particular stretch of water several times in daylight so we could avoid the deep pools when the moonlight would be hidden due to the position of the bluff. Another memorable moment was when I apparently got too close to Mr. or Mrs. Beaver (*Castor canadensis*) as the sharp tail slap almost made me jump out of my waders. What a night!

While my jitterbugging episode involved a close friend, my most memorable moments have been fishing with my children. Whether it has been at the neighbor's catfish pond in Texas County or fishing at Mutti and Poppi's cabin on a lake in northern Minnesota, both have been special moments. There's nothing like a youngster catching their first fish. The opportunities for young and old, parent and child, to participate in outdoor activities that provide insight into the natural world



are priceless. In our great state of Missouri, memorable fishing opportunities abound, whether it be a small stream or pond to larger rivers and impoundments. Each will create a memorable moment.

A great opportunity to introduce family and friends to the joys of fishing is Missouri's Free Fishing Days on Saturday, June 11, and Sunday, June 12. No permits or prescribed area daily fishing tags are required for this weekend.

I would encourage each of you to take advantage of this opportunity to spend some time enjoying one of Missouri's many natural wonders with family and friends.

In addition to these incredible fishing opportunities, Missouri is the home of many natural wonders. We are blessed with a rich history of citizens who were tied to the land and supported the conservation of those special natural resources. Through the wisdom of past generations, a Commission for conservation governance was established in 1936.

As a public servant and avid outdoorsman, I am constantly in awe of Missourians' vision for our natural resources. I am equally aware of the tremendous responsibility employees of Missouri's Department of Conservation have to meet the expectations of citizens. Please know the Department's employees take the mission entrusted to them very seriously. As chairman of the Department's Regulations Committee, I am constantly looking for ways to balance the desires of citizens with the need to responsibly protect and sustain Missouri's natural resources for current and future generations. Will we always agree on regulation approaches? Probably not. But, be assured the Department is always looking for balance and is eager to hear from you.

I wish all of you many memorable outdoor experiences in this great state of ours.

Tom Draper, deputy director



FEATURES

10 Managing the Land

by Paul Hagey

A quest for Blooming Paradise.

16 A Shopper's Guide to Building With Nature

by Bonnie Chasteen

Making real estate and landscaping choices with wildlife in mind.

22 The Adaptable Roadrunner

by Andy Forbes, photos by Noppadol Paothong

An up-close look at one of our most unique birds.

Cover: Blazing star and gray-headed coneflower by Noppadol Paothong

Above: Prairie lizard on a glade by Noppadol Paothong

MISCELLANY

2 Letters

4 News & Events

5 Ombudsman

28 Plants & Animals

30 Places To Go

32 Hunting and Fishing Calendar

32 Contributors

33 Agent Notes

LETTERS

Submissions reflect readers' opinions and might be edited for length and clarity.

ZEBRA MUSSELS

If I can't wait five days to use my boat,

thus allowing it to dry for the recommended time to prevent the unwanted transport of zebra mussels, is there another method of destroying them? Is there some product that I can spray in my boat?

Vic Neece, via Facebook

Moderator's note: Pressure washing with hot water (140 degrees) works well. If you don't have hot water, a carwash is quite effective, but make sure to drain any standing water. The motto of boat cleaning is Clean, Drain and Dry. If you use your boat in the same lake you

don't need to do anything. Also, if you pull your boat out on a daily basis, it is not likely to have adults attached to it. Therefore, getting all the water drained from the boat, i.e., bilges, live wells, etc., is important. Zebra mussel larvae won't live without standing water.

TURKEY TALK

The turkeys that live in urban settings are much less wary of humans. We have several pictures of hens on our deck rail feeding from our bird feeders. There is a flock of turkeys in our neighborhood, and we knew that they were feeding on the ground below our feeders, but the last couple of years they figured that they could fly up and eat right out of our feeders. We always go out and shoo them off so they don't stay long. They are wary of humans but not as afraid as rural birds.

Bruce McNamara, via Internet

How's the turkey harvest coming along this year?

Tim Nevils, via Facebook

Moderator's note: Here is a link to harvest totals: <http://extra.mdc.mo.gov/cgi-bin/maps/deerturkey/totals.cgi>.

STEADY FRIENDS

I look forward every month to receiving the *Missouri Conservationist*. My late husband was an avid hunter and fisherman. After his passing, I continued to receive your magazine. The beautiful pictures, plus the information you print, are very rewarding. I turned 90 this year and enjoy it so much.

Pearl Northcutt, Mexico

I have subscribed to your magazine for more years than I can remember. My children grew up on our small acreage in Jefferson County with a love for nature and its beauty. I have to admit I always turn it to the last page of your magazine for the Chmielniak cartoon, which always brings a chuckle. Two years ago, a copy of her cartoon went to Iraq to my son who was deployed for the second time. Although he is no longer an "official" resident of Missouri, but of the U.S. Army, he still gets his copies of the Chmielniak cartoons, which he thoroughly enjoys.

Eunice Atwell, Hillsboro

ALL-STAR ISSUE

Your March issue was outstanding. I always look through the magazine at the pictures and articles and decide which articles I want to read. This month all the articles really appealed to me, so I read the magazine from cover to cover.

The article on robins [Just a Robin; Page 16] especially appealed to me since I am a bird lover and robins are my favorite. The pictures of the mother robin feeding worms to her young was heartwarming. It brought a lump to my throat and a tear to my eye.

All of your writers and photographers are outstanding. I noticed most of the writers were new to me. They did an excellent job. I also liked the dogwood cover.

Nancy Wunderlich, St. Louis

Reader Photo

SHOW-ME MOTH

Curtis Waguestack of Lee's Summit photographed this cecropia moth last June. The cecropia is the largest moth species in Missouri. "For all of the time I've spent outdoors in Missouri," said Waguestack, "this was the first cecropia moth I'd ever encountered. It's nice to know that the outdoors of the show-me state still has some surprises left to show me." Waguestack is an avid bowhunter, but not necessarily an avid photographer. "But," said Waguestack, "it's hard not to snap a picture here and there when the *Conservationist* shows up each month delivering inspiration to get out and see what's out there."



DEPARTMENT HEADQUARTERS

Phone: 573-751-4115
Address: PO Box 180,
 Jefferson City 65102-0180

REGIONAL OFFICES

Southeast/Cape Girardeau: 573-290-5730
Central/Columbia: 573-884-6861
Kansas City: 816-655-6250
Northeast/Kirksville: 660-785-2420
Southwest/Springfield: 417-895-6880
Northwest/St. Joseph: 816-271-3100
St. Louis: 636-441-4554
Ozark/West Plains: 417-256-7161

Don't Get Scammed—Do not give any information to anyone who comes to your door soliciting *Conservationist* subscriptions. It could be a scam. Get as much information as possible and then contact your regional Missouri Department of Conservation office, police department or the Missouri Consumer Protection Hotline at 1-800-392-8222.

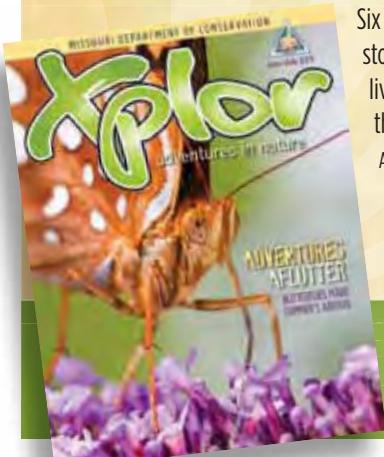
MDC Online

Discover more about nature and the outdoors through these sites.

Blog: www.MissouriConservation.org/node/109
Facebook: www.facebook.com/MDConline
Flickr: www.MissouriConservation.org/20010
Kid's site: www.XplorMo.org
Missouri Conservationist website: www.MissouriConservation.org/3939

MDC Web site: www.mdc.mo.gov
Nature Shop: www.mdcNatureShop.com
Twitter: www.twitter.com/MDC_Online
www.twitter.com/Nature_Videos
YouTube: www.youtube.com/user/moconservation

Kids' Magazine



Six times a year we'll bring you eye-popping art, photos and stories about Missouri's coolest critters, niftiest natural places, liveliest outdoor activities and people who've made a living in the wild. Come outside with us and **XPLOR!**

Ages: 7-12
 Missouri residents: FREE (one subscription per household)
 Out of state: \$5 per year; Out of country: \$8 per year
A guardian's name and address is required with the subscription.
Please allow 6-8 weeks for delivery of your first issue.

SIGN UP NOW!

www.XplorMo.org
 573-522-4115, ext. 3856 or 3249

MISSOURI Conservationist

GOVERNOR Jeremiah W. "Jay" Nixon

THE CONSERVATION COMMISSION

Don C. Bedell
Don R. Johnson
William F. "Chip" McGeehan
Becky L. Plattner

Director Robert L. Ziehmer
Deputy Director Thomas A. Draper
Deputy Director Tim D. Ripperger
General Counsel Tracy E. McGinnis
Internal Auditor Nancy R. Dubbert

DIVISION CHIEFS

Administrative Services Carter Campbell
Design and Development Jacob Careaga
Fisheries Chris Vitello
Forestry Lisa G. Allen
Human Resources Thomas Neubauer
Outreach & Education Mike Huffman
Private Land Services Mike Hubbard
Protection Larry D. Yannitz
Resource Science Mike Kruse
Wildlife DeeCee Darrow

CONSERVATIONIST STAFF

Editor In Chief Ara Clark
Managing Editor Nichole LeClair Terrill
Art Director Cliff White
Staff Writer Bonnie Chasteen
Staff Writer Jim Low
Photographer Noppadol Paothong
Photographer David Stoner
Designer Stephanie Thurber
Artist Mark Raithel
Circulation Laura Scheuler

The *Missouri Conservationist* (ISSN 0026-6515) is the official monthly publication of the Missouri Department of Conservation, 2901 West Truman Boulevard, Jefferson City, MO (Mailing address: PO Box 180, Jefferson City, MO 65102.) Subscription free to adult Missouri residents; out of state \$7 per year; out of country \$10 per year. Notification of address change must include both old and new address (send mailing label with the subscriber number on it) with 60-day notice. Preferred periodical postage paid at Jefferson City, Mo., and at additional entry offices. Postmaster: Send correspondence to Circulation, PO Box 180, Jefferson City, MO 65102-0180. Phone: 573-522-4115, ext. 3856 or 3249. Copyright © 2011 by the Conservation Commission of the State of Missouri.

Equal opportunity to participate in and benefit from programs of the Missouri Department of Conservation is available to all individuals without regard to their race, color, national origin, sex, age or disability. Questions should be directed to the Department of Conservation, PO Box 180, Jefferson City, MO 65102, 573-751-4115 (voice) or 800-735-2966 (TTY), or to the U.S. Fish and Wildlife Service Division of Federal Assistance, 4401 N. Fairfax Drive, Mail Stop: MBSP-4020, Arlington, VA 22203.

Printed with soy ink

NEWS & EVENTS



Resource Science Assistant Thomas Huffmon holds a pallid sturgeon caught by a research crew on the Missouri River. Pallid sturgeon can live 50 years or more and can weigh more than 60 pounds.

Pallid Sturgeon Research and Stocking Provides Hope

A pallid sturgeon born in the muddy flows of the Missouri or Mississippi rivers is among the rarest fishes in North America, an endangered species facing extinction.

Which is why a researcher who handles dozens of big fish daily got excited when he saw the flat snout and staggered barbels on a pale, 3-foot-long fish thrashing in the Missouri River.

"Ooh, big pallid," shouted Thomas Huffmon, a resource science assistant for the Missouri Department of Conservation (MDC), seeking hatchery brood fish to save a species.

"Because it's so big, it's probably pretty old," said Darby Niswonger, a resource staff scientist for MDC's Missouri River Field Station. "There's a good chance it's a wild fish."

A multi-state, multi-agency Missouri River Recovery Program funded and led by the U.S. Army Corps of Engineers aims to help pallid sturgeons

and other fish and wildlife species affected by river modifications. As part of that program, MDC fisheries crews this spring were catching wild pallids from the river as brood fish for spawning at MDC's Blind Pony Hatchery near Sweet Springs. Those fish carry genetic diversity that's needed if hatchery-raised pallids are to help the species survive in their native rivers.

Biologists worry that with low numbers of pallids remaining, the chances of males and females finding one another during the spring spawning season are remote, Niswonger said. Plus, pallid males and females don't reach reproductive maturity until 7 to 13 years, and both only reproduce every couple of years. Stocking hatchery-raised fish is one hope for helping pallids rebound.

Niswonger and Huffmon caught one pallid sturgeon that day and it received special attention.

The crew recorded its measurements, the location where it was caught and the water temperature and flow velocity. Niswonger then ran an electronic scanner over the pallid to see if it had an implanted microchip, which would indicate that it is a hatchery-reared fish. She found none. A microchip was inserted into the fish that enables researchers to track the fish's growth and movement in the river if the fish is caught again.

Fish taken to the hatchery are later returned to the river. The biologist also clipped a portion of fin for DNA testing at a laboratory. It will not be utilized until a DNA test ensures that it is different from the hatchery-reared pallids. More than a million young pallids have been released into the Missouri and Mississippi rivers, with three stockings in the 1990s and annual stockings since 2001.

Just raising pallids in a hatchery and releasing them won't make the population sustainable. Biologists want to know what underwater habitats the fish prefer during spawning. "We still don't know for sure what the bottleneck is," Niswonger said, "what's keeping them from growing and maturing and spawning on their own." Research crews from MDC and other agencies also study the fish in other seasons, such as following some with radio telemetry, so habitat can be modified along the river to help them. The fate of pallids is tied to solving mysteries beneath a churning river's surface. —by Bill Graham

Preserving Family Heritage

Patricia (Trish) Meagher Rucker has wonderful memories of visiting the family farm near Silvermines in Madison County while growing up. Her grandparents lived on the farm from 1890 to 1944, raising pigs, cattle, chickens—and children. Her grandfather was also the Silvermines' postmaster, a position he held for more than 44 years. The farm was later owned by her aunt and uncle, James and Erma Royer, and inherited by her father, Robert Meagher, who practiced law in Fredericktown.

Following her father's death in 2007, Trish contacted the Department about donating the 84-acre home place, situated immediately south of Millstream Gardens Conservation Area (CA) approximately 8 miles west of Fredericktown. "I simply could not sell the land," Trish said. "It had been in the family since my great-great



Patricia (Trish) Meagher Rucker

grandparents bought it in 1860. It was a place filled with so many memories. I knew that the St. Francis River straddled Millstream Gardens and that my family's land would provide public access to the part of the conservation area lying south of the river. I also liked the idea that my family and I would still be able to hike around on it."

Trish's donation to the Department was given in honor of her children, Roberta and James, and the tract is named to honor her grandparents. The Robert Patrick and Lula Ellis Meagher Conservation Tract, which consists of a mix of pasture and woodlands, is managed as part of the Millstream Gardens CA. For more information on Millstream Gardens CA, visit www.mdc.mo.gov/node/a8210. —by David McAllister

Free Fishing Days

This is your chance to try fishing without having to buy a permit. MDC's annual Free Fishing Days are June 11 and 12. Any person may fish state waters without a permit, trout permit or prescribed area daily tag during Free Fishing Days.

Requirements for special permits still may apply at some county, city or private areas. Normal regulations, such as size and daily limits, still apply, too. So, borrow a neighbor's rod and reel, or come out to a conservation area where a Free Fishing Days program is scheduled, and borrow ours. To see a list of Free Fishing Days events, visit www.mdc.mo.gov/node/3675. To find a conservation area near you, visit www.mdc.mo.gov/node/8911.



ASK THE OMBUDSMAN

Q: Is it legal to use Asian carp for bait?

A: Bighead and silver carp, both Asian carp, may not be used as live bait but may be used as dead or cut bait. Most native, nongame

fish can be used as live bait but Asian carp are undesirable, aggressively spreading, nonnative species. Live bait can become established in the water where it is used. To avoid the spread of harmful species, no live bait of any kind should be dumped into Missouri's waters. Put unused bait in a plastic bag and dispose of it in the trash.

Q: Can you identify the metallic-green and bronze-colored beetles that are eating the foliage on my grape vines? They are about one-half inch long.

A: Your pest may be the Japanese beetle, which is an exotic invasive insect that has become more plentiful and widespread in Missouri in recent years. The insect can damage many different plant species, including corn, soybeans, garden crops, fruit trees and many ornamentals. Feeding adult beetles reduce foliage to a lace-like appearance, as they avoid eating veins of the leaves. Adult female beetles

lay eggs in July that hatch into white larvae or grubs that will overwinter in the soil. The grubs can damage turf grasses by feeding on the roots. They emerge from the soil as adult feeding beetles, usually in early- to mid-June. For more information see: www.aphis.usda.gov/lpa/pubs/pub_phjbeetle04.pdf.



Japanese beetle

Ombudsman Tim Smith will respond to your questions, suggestions or complaints concerning Department of Conservation programs. Write him at PO Box 180, Jefferson City, MO 65102-0180, call him at 573-522-4115, ext. 3848, or e-mail him at Ombudsman@mdc.mo.gov.

New Kansas City Office

The new MDC Kansas City Regional office opened May 2 at 12405 S.E. Ranson Road, near Lee's Summit. The new office is a visitor center for James A. Reed Memorial Conservation Area (CA). The road to the new office also is the main entrance to the 3,084-acre CA. A classroom is available for conservation training and meetings. Visitors can pick up area maps and other free conservation literature, obtain hunting and fishing permits, and buy nature books. The office will be open from 8 a.m. to 5 p.m. Monday through Friday, except on state holidays. No staff will be present on weekends. However, outdoor, self-serve stations for hunters to pick up and deposit hunt cards during dove, waterfowl, rabbit and squirrel seasons will be available. For more information, call 816-655-6250, or visit www.mdc.mo.gov/node/a5501 for information about James A. Reed CA.

Thriving in the Tall Grass

Three research biologists stood motionless, listening for one meek call among the many louder bird songs wafting across a grassy field on a recent spring morning. Levi Jaster and two assistants spend many mornings searching for Henslow's sparrows, a tiny, 4-inch bird weighing less than an ounce. These birds live reclusively in tall prairie grasses. The biologists' experienced ears picked out the thin chirp from other sounds.

Henslow's sparrows are a grassland bird in

decline nationally and considered a "species of concern" by the U.S. Fish and Wildlife Service. But fortunately, Henslow's sparrows are nesting and thriving at Missouri Department of Conservation (MDC) areas near Sedalia, Cole Camp and Green Ridge. These areas are being preserved or restored with native grasses and wildflowers. The research on this day was at the Bruns Tract west of Green Ridge, which is owned by the Missouri Prairie Foundation but managed by MDC. The research team is also studying the sparrows at other MDC areas managed for grassland plants and wildlife.

Jaster, of Concordia, is a graduate student at Emporia State University in Kansas. This is his second year of research on Henslow's sparrows at MDC prairie areas. This summer he's studying the birds' usage of fields with nonnative cool season grasses compared to former crop fields now replanted with native prairie grasses. The research also serves to gather other data on population trends, nesting and habitat preferences that might be useful in helping all grassland birds in Missouri and other states.

In prior decades, little research was done on Henslow's sparrows, Jaster said. Casual bird watchers don't often see them in the grassy fields. They spend winters at coastal pine savannahs, a tree and grass mix, in the southeastern United States. In the spring they migrate to Midwestern and Northeastern open lands to

build nests on the ground. In spring, males fly up from the ground and cling to waist-high grass and chirp to defend their mating territory. Some Henslow's sparrow nests are barely bigger than a quarter and hidden in dead or greening grass clumps. Tracking their reproduction is difficult.

"We know so little about them," Jaster said. "They tend to stay on the ground. They run on the ground. You sometimes see them carrying food back and forth to the nest, and that's about it."

The crew banded 42 Henslow's sparrows last year and they are having good success at finding birds this spring. MDC-managed prairies have a diversity of habitat that attracts and sustains grassland birds, he said.

"There's not much out there beyond these areas for them to use that's really high-quality habitat for them," Jaster said.

Jaster's study is finding useful information about breeding sites that Henslow's sparrows prefer and what natural habitat provides buffers for them between houses and roads. Such information may be useful for helping prairie chickens, said Steve Cooper, an MDC wildlife management biologist.

"What we're doing is helping Henslow's sparrows as we try to help prairie chickens," Cooper said, "and that makes me feel good." —by Bill Graham

Turkey Harvest Report

A 9.3 percent dip in the 2011 spring turkey harvest confirms what Missourians already knew—it has been a stormy spring in the Show-Me State.

Resource Scientist Jason Isabelle, the Conservation Department's turkey specialist, announced that hunters checked 38,328 turkeys during the regular spring turkey season April 18 through May 8. That is down 3,926 from last year.

Adding the harvest from the youth turkey season, April 9 and 10, brings Missouri's 2011 spring turkey harvest to 42,226. That is down 8.6 percent from last year. Spring turkey permit sales were down 4,885, or 3.3 percent, from last year.

Top harvest counties were Franklin, with 840 turkeys checked, Texas with 699 and Bollinger with 675. Juvenile gobblers, known as "jakes," made up 19.6 percent of the harvest. That is virtually identical to last year, when jakes comprised 20 percent of the harvest.



Henslow's sparrow

HENSLOW'S SPARROW: NOPADOL PAOTHONG; ANGLERS: DAVID STONNER

Isabelle predicted a smaller harvest this year because of a decline in turkey numbers statewide.

"We still have very strong wild turkey numbers in most areas compared to other states," said Isabelle, "but there is no question that the population is down, and more in some areas than others. That was bound to affect our harvest this year."

The season got off to a good start. The youth harvest was virtually identical to last year's, and the opening-day harvest was slightly higher than in 2010. Then it turned cool and stormy.

Rain, cool temperatures and wind have a double negative effect on hunting success. Stormy weather causes male turkeys to gobble less, making them harder to hunt. Nasty weather also discourages hunters from going afield.

Isabelle said he doesn't expect this spring's relatively light harvest to have a significant effect on the state's turkey population. This is partly because 99 percent of the harvested turkeys are males, and turkey reproduction is determined by the number of hens. MDC sets the hunting season late enough in the spring to allow ample opportunity for gobblers and hens to breed prior to the start of the season.

"Harvesting 4,000 fewer gobblers in the spring is a minor factor compared to annual reproduction," said Isabelle. "In a good year, our hens can produce more than 300,000 poult (young turkeys). That dwarfs the total number of gobblers we harvest, even when hunting conditions are good."

Isabelle said Missouri has enough wild-turkey hens to stage a population recovery. To do that, however, the birds need favorable weather. Wet conditions take a toll on nesting success of ground-nesting birds like turkeys. It also reduces survival of poult, which are susceptible to hypothermia when cool, wet weather prevails.

"Even in areas where flooding has occurred, hens still have time to re-nest and bring off a good crop of poult," he said. "We have had several years of bad nesting conditions, but I'm hoping this will be the year when we get warmer, drier weather, and turkey numbers bounce back a bit. May and June are critical months for wild turkey production, and it's still not too late for conditions to improve."

County-by-county spring turkey harvest totals are available at www.mdc.mo.gov/node/12518.



Did You Know?

Conservation makes Missouri a great place to fish.

Great Resources Available Online for Missouri Anglers

» **Fishing In Missouri** — www.mdc.mo.gov/node/89 — Missouri has more than a million acres of surface water, and most of it provides great fishing. From cold-water fly fishing for trout to trotlining for monster catfish in the big rivers, Missouri has it all. Explore this site to find everything you need to enjoy angling in Missouri. Below we list a few highlights to get you started.

» **Fish Attractor Maps** — www.mdc.mo.gov/node/10182 — Find the best fishing spots with our statewide interactive and PDF fish attractor maps.

» **Boat Ramp Map** — <http://newmdcgis.mdc.mo.gov/Boat%20Ramps/> — If you need to find a place to launch your boat, use this interactive map to find the best boat ramp for your outing.

» **Fishing Prospects** — www.mdc.mo.gov/node/8711 — Visit this page to find a wealth of information about the outlook for fishing at many of our lakes, rivers and trout parks. Included is a section called "best bets," where you can find the best locations to catch specific types of fish.

» **Weekly Fishing Report** — www.mdc.mo.gov/node/8710 — Go to this site to sign up for a weekly email from the first Thursday in April through September with general fishing conditions at selected lakes, rivers and trout parks across Missouri.

» **Introduction to Fishing** — www.mdc.mo.gov/node/7753 — If you're new to fishing, visit this page to find information on gear, techniques, bait, cooking your catch and much more.

» **Regulations** — www.mdc.mo.gov/node/3104 — Missouri's fishing regulations aim to improve and maintain the quality of fishing, ensuring that everyone has an equal chance of catching fish, while protecting our fisheries. Learn the regulations before you cast a line.

ELK Return to Missouri

The hills around Peck Ranch Conservation Area once again will echo with the bugles of bull elk.

by JIM LOW



By 7 a.m. on the morning of the release at Peck Ranch CA, Missouri's first elk were grazing calmly in their pens.

SOMETIMES WORDS SIMPLY FAIL. Missouri Conservation Commission Chairman Becky Plattner was struck speechless the morning of May 5 as she stood in the blue dawn light atop a remote ridge in Carter County. She was listening to sharp snorts and muted barks coming from a stock trailer holding 34 elk. Overwhelmed by emotion after opening the trailer door, she turned to Conservation Commissioner Chip McGeehan and placed her hand over her heart in a gesture of awe.

McGeehan joined Conservation Department biologists wielding plywood shields as they herded the elk from the trailer and through a series of gates to sort them into holding pens. When he glanced up at Plattner, she teased "Why are your eyes so big, Chip?"

"We're making history," he replied.

McGeehan was referring to the return of wild elk to Missouri after an absence of 150 years. The elk began their odyssey in January, when they were captured by MDC staff in cooperation with biologists from the Kentucky Department of Fish and Wildlife Resources. Three months later, with the requirements of stringent veterinary-health protocols met, the elk made a 12-hour trip, arriving at Peck Ranch Conservation Area shortly after 6:30 a.m. The timing was critical to keep the animals cool and minimize stress.

Plattner and McGeehan joined officials of the Rocky Mountain Elk Foundation (RMEF) and MDC staff directly involved in the elk-restoration effort for the elk's arrival. They watched as MDC staff guided six bull elk and 28 cows and calves into separate holding pens.

"Who would have thought 30 years ago that we would be standing here this morning watching elk return to Missouri?" MDC Director Bob Ziehmer mused the morning of the arrival of the elk. "This amazing event is a continuation of the Conservation legacy that Missouri citizens created and continue to support today."

Ziehmer said the return of elk to Missouri marks a new era in the Show-Me State's conservation history. The fact that Missouri now has appropriate habitat for elk is tangible proof that long-term, landscape-scale habitat conservation and restoration efforts are coming to fruition.

"When I saw those animals come off the trailer it made the hair on the back of my neck

stand up," said RMEF Missouri State Chairman Dave Pace. "Seeing these animals come back, so generations and generations of Missourians will get to see them, is a very momentous occasion. This is a great day for wildlife, it's a great day for conservation, and it's a great day for the Rocky Mountain Elk Foundation and all our volunteers. This is what we work for."

Twenty-three-thousand-acre Peck Ranch CA is at the heart of a 346-square-mile elk restoration zone that encompasses parts of Carter, Shannon and Reynolds counties. After an acclimation period the elk will be released into Peck Ranch's rugged hills and valleys, where MDC has been working for 30 years to recreate the landscape-scale type of habitat that sustains multiple species of wildlife.

The RMEF is a major supporter of Missouri's elk-restoration program.

"There is no higher calling in conservation than restoring a native game species to sustainable, huntably, balanced populations," said RMEF President David Allen in a prepared statement. "We are proud to partner in that kind of effort in Missouri, just as we have been in Kentucky, Tennessee, Wisconsin and Great Smoky Mountains National Park in North Carolina. As in those places, the Rocky Mountain Elk Foundation is in this for the long haul in Missouri, too. We will remain by your side to ensure these elk not only arrive, but thrive. And we'll be here to help you show conservationists around the world what is possible when you dream big and never give up."

Missouri's elk will remain in the holding pens at Peck Ranch for up to two weeks to allow them to acclimate to their new home. When the time comes to release the elk from the pens, workers will quietly open gates at night, so the animals can leave on their own when they discover they no longer are confined.

"It's called a 'soft release,'" said Resource Scientist Lonnie Hansen. "This is a technique recommended by our partners in Kentucky, based on their experience. They found that if they brought elk in and released them directly from trailers, the animals bolted from the area. That increased the risk of injury to the elk, and it didn't encourage them to stay near the release site."

For the same reason, said Hansen, MDC had



a low-key arrival event at the holding facility when the elk arrived.

Peck Ranch's refuge area will remain closed to the public through July. By then, all the calves will have been born and adjusted to their surroundings.

Hansen said MDC is counting on landscape scale habitat restoration that has been underway at Peck Ranch for more than 30 years, which is designed to benefit multiple species of wildlife. He said MDC's elk-restoration plan includes provisions to deal with elk that find their way onto land where they are not welcome. Long-term plans call for hunting as a tool to manage the size of the elk herd. When hunting commences will depend on how quickly the herd grows, but Hansen said it could begin as soon as 2015. ▲

Conservation Commissioner Chip McGeehan took an active part in welcoming Missouri's first elk to their new home at Peck Ranch Conservation Area.

So see photos and video of the elk's arrival, visit
www.mdc.mo.gov/node/11377.

A Quest for
BLOOMING PARADISE.

Managing the Land

by PAUL HAGEY





EVERY WEEKEND FOR THE PAST SIX YEARS, excluding four (deer hunting, Thanksgiving, Christmas and taxes), from mid-October to mid-April, Dan Drees has been out restoring his land. Even on the most forbidding day, Dan can be found loading chainsaws onto his ATV and heading out to practice what he calls “chainsaw therapy.”

A Professional and Personal Pursuit

Dan, a fire ecologist with the National Park Service, and his wife, Susan Farrington, a plant community ecologist with the Missouri Department of Conservation (MDC), own 218 acres of land near the Current River in Shannon County, a portion of which encompasses Little Shawnee Creek, a tributary of the Jacks Fork River. The property is shaped like a mirror-imaged capital letter “L,” with its long side running north, the leg jutting west. After designing and building a house, they began a comprehensive land restoration program in early 2005, a year after they bought the property. In recognition of the end goal for the land, they christened it “Blooming Paradise.”

Dan and Susan met, fittingly, on a glade-woodland restoration project at Meramec State Park in 1998. Susan, now 48, was a Sierra Club volunteer that day. Dan, now 54, was a naturalist at the park, supervising the cutting and burning of woodland-invading eastern red cedars. They married in 2003 and bought their Shannon County property the next year. Dan, who worked for many years for the Missouri Department of Natural Resources as a park naturalist and briefly for MDC as a natural history biologist, joined the National Park Service as a fire ecologist in early 2009.

Purchasing Blooming Paradise fulfilled a lifelong dream for Dan. He focused his whole career to live and work, eventually, in the Current River watershed. Born and raised near St. Louis, his childhood, like that of many Missourians, included visits to the wild Jacks Fork and Current rivers country. He remembers camping at Alley Spring, Round Spring and Circle B. Those trips left an impression. “I always knew I wanted to live and work in Shannon County,” he says. By third grade he knew what he wanted to do and where he wanted to live. Forty years later he made it happen. Susan, raised in upstate New York and California and educated in Pennsylvania, arrived in Missouri as a lead horticulturist for the Missouri Botanical Garden in 1996. In 1998, she met Dan and her

A butterfly feeds on nectar from a rough blazing star plant on one of the glades restored on “Blooming Paradise,” property owned by Dan Drees and Susan Farrington.

budding natural resource interests, supported by Dan, inspired her to enter graduate school and change careers. After earning a M.S. in forestry in 2006, she began her current position, which includes managing the ground flora study of the Missouri Ozark Forest Ecosystem Project, an MDC-run, 100-year, 9,000-acre timber management experiment.

Diamond in the Rough

When looking for land, the only conditions Dan and Susan had for prospective sites were that it be more than 80 acres and be located between Eminence and Peck Ranch, an MDC conservation area in northern Carter County where Dan worked at the time. There weren't too many properties that fit this requirement, says Dan. But Blooming Paradise turned out to be the proverbial jewel in the rough. The property's east edge borders Pioneer Forest, a sustainably harvested private forest, which added to the property's initial allure. "Your enjoyment of your property is accelerated by the integrity of your neighbor's property," says Dan—a wisdom he and Susan applied. While scouting a section of the land one day soon after buying it, Dan found what would become known as "Blazing Star Glade." He called Susan excitedly, he remembers, "We've got a glade! We've got a glade!" It wouldn't be the only one.

Landowners manage land in different ways depending on what they want it to do: feed

Dan Drees burns red cedar on his property. Eastern red cedar is native to Missouri, but without periodic prescribed fires, their numbers can choke out other native species.



cows, grow hay, support wildlife for hunting, develop timber for eventual harvest, raise crops, etc. Dan and Susan's motivation, given that they have full-time jobs that support them financially, is unusual for private landowners. Their goal is to preserve and restore the greatest amount of native biodiversity that belongs on the property. They use their considerable expertise and knowledge of Ozark ecology (and that of their vast network of colleagues) to determine the context of this belonging—how and where to perform which restoration practice. Since they bought their property, they have undertaken glade and woodland restoration, cool- to warm-season grass conversion, timber stand improvement, erosion repair, wildlife food-plot establishment and prescribed burning.

Most of Dan and Susan's land work has involved participation in federal and state cost-share programs. Cost-share programs offer incentives for private landowners to manage their land in ways that coincide with conservation objectives: erosion control, wildlife habitat improvement, etc. Recognizing that true ecosystem health is met by improving land over vast landscapes, state and federal organizations developed cost-share programs to encourage private landowner work that enhances work done on adjacent public land.

Dan and Susan's land is a patchwork of ecosystems. There's a 21-acre low-lying hayed pasture in the southwest portion of the property, which borders the county road that accesses their property. There's a 26-acre warm-season grass field toward the southern end of the property. The rest of the 218 acres is either restored glade-woodland or overgrown glade-woodland





with the exception of both a northeastern segment of the property, which approaches true forest, and, across the county road, an 18-acre creekwoods section bought from a neighbor to preserve a forested riparian zone for the creek.

Dan and Susan's home is located near the middle of the short leg of the reverse-L-shaped property. A driveway winds up from the county road about 200 feet to their self-designed house on the pinnacle of a hill. Designed to take advantage of passive solar energy, it's aligned east and west with large south- and east-exposed dining room windows. The windows overlook a large pond, which lies at the base of a hill whose knob rises a little higher than the house and has a dense growth of warm-season grass. As with a lot of pastureland in Missouri, and indeed elsewhere, fescue dominated the cleared pastures of Dan and Susan's property when they purchased it. Nonnative fescue is a cool-season grass, a group of grasses that green up in spring and early summer. Warm-season grasses flourish throughout the summer, allow-

space for nesting and foraging, and sustain a variety of wildlife that fescue, and other cool-season grasses, do not.

Susan's Glade

In the winter and spring of 2010, Dan focused on a 21-acre woodland section of the property, which has a dolomite glade at its center. Dan dubbed it "Susan's Glade," because she brought him out to see it and pushed for its restoration. Glades, often dotted with exposed outcrops of igneous, limestone or dolomite rock, are one of the hallmark ecosystems of the Missouri Ozarks. They are typically found on south to southwest-facing slopes and receive a lot of sun. Therefore, these glades are drier, and, historically, burned more frequently and intensely than surrounding areas, which kept the red cedar trees out. Eastern red cedar trees are native to Missouri and the Ozarks, but a lack of prescribed fire in the region has allowed their numbers to swell a thousand-fold since historic times, says Dan.

Prescribed burns on Blazing Star Glade performed in 2006 (above left) led to native grass and plant growth in 2008 (above).

Prairie iris (right),
a species of
conservation
concern,
and glade
coneflowers
(below),
appeared after
restoration
efforts on
Blooming
Paradise.



Over thousands of years, the Ozarks experienced periodic landscape fire. This fire sustained a mosaic of glade, woodland and forest, with woodlands being the predominant land type. When woodlands and glades are restored by reducing the numbers of encroaching eastern red cedars and performing periodic prescribed burns, the biodiversity that evolved over time in the Ozarks blossoms. With this in mind, Dan and Susan are careful, aside from the warm-season grass conversion, not to plant any plants

on their property. They want the land itself to dictate what emerges. And what has emerged has been remarkable. Susan, as a professional botanist, has identified more than 500 native plant species on the property. Dan points out that there are not many 200-acre parcels on Missouri's designated natural areas that have 500 native plant species on them.

Biodiversity is a boon to the whole ecosystem. A more diverse landscape creates a habitat mosaic that supports different forage, nesting and cover opportunities for a range of wildlife, including quail, turkey, deer and insects. A diversity of plant life results in staggered, steady growth throughout the growing season, which ensures more insects, which in turn become a high-protein food source for a variety of wildlife. As Dan puts it, "Biodiversity ensures that there's always something on the dinner table." There's an aesthetic appeal as well with biodiversity. Colors come and go in the seasons of flowers: glade coneflower and Missouri evening primrose in the spring, rough blazing star in the fall.

Susan's Glade spreads over the eastern portion of the property, toward the base of the reverse-L. Work on the glade involved cutting and burning red cedar trees. The restoration border emphasizes the immense difference red cedars make on a glade. Even without thinking of the ecology involved, their choking presence becomes clear when juxtaposed with an open glade. The red cedar-free glade has a natural feel; 8-foot-tall big bluestem stalks bend overhead, dolomite outcrops and patches of glade plants dot the hillside among downed cedar skeletons. The work was straightforward. Dan felled the red cedars and cut the larger pieces into logs to be sold to a cedar sawmill. He cut the smaller logs and branches to manageable size, and then Susan (sometimes with visiting friends and family) fed them into a bonfire.

Although it isn't about the money for Dan and Susan, the federal cost-share program for this 21-acre overgrown glade-woodland helped pay for the cost of tree cutting and two subsequent prescribed burns. Dan and Susan would have done much of the work anyway, they say, but not as many acres or as quickly. "There are some weekends I would've been fishing instead," says Dan.

Home Stretch

A little more than a year ago, Dan stood 200 yards from the east property boundary, which is also the border for this cost-share plan. As far as the eye could see, there was a dense stand of eastern red cedars. One hundred yards down-hill to the south, eastern red cedar. One hundred yards north, half already open, but above that, eastern red cedar. It seemed there was still so far to go to reach his March 2011 deadline. Cost-share money is only disbursed if all conditions of the written cost-share contract are fulfilled within the given time period, and his project was given three years. But Dan and Susan weren't discouraged. They realized that work on a glade does get easier after a point. They wouldn't need to burn up all of the cedar slash, and they wouldn't have to cut every red cedar tree. They pressed into the final phase of their project.

Thanks to their dedication to the project, and no small amount of personal fortitude, Dan and Susan met their goal this spring. They completed the last of seven cost-share programs on the property, including Susan's Glade.

In some ways, finishing this project is the end of an era for Blooming Paradise, but as Dan says, prescribed burning and vigilant exotic invasive control will be a yearly process. They have burned 90 acres already this year. Dan and Susan are 80 percent to their restoration goal, says Dan, and evidence of the land's habitat health is clear. Dan heard quail singing outside his house one recent morning, and that's not too common in the Ozarks anymore, he says.

This project might be over, but there's something else that might keep Dan from working on his fishing: He has a contract on 118 acres of land a few miles east of Blooming Paradise, where restoration work will begin all over again. ▲

Because of Dan and Susan's efforts, more than 500 native plant species have been identified on the property.





DAVID STONNER



Landscaped to attract birds and butterflies, Bill and Paula Frazier's Liberty, Mo. property borders 35 acres of timber that will never be developed.

*Making real estate
and landscaping choices
with wildlife in mind.*

A Shopper's Guide to **BUILDING** *with* **NATURE**

{by BONNIE CHASTEEN }

IF YOU LOVE WILDLIFE, YOU PROBABLY ALREADY KNOW that habitat loss is the greatest threat to its survival. And you probably also know that development is the leading cause of habitat loss in Missouri and around the globe.

Of course, "development" includes homes, towns and businesses—the places where we live and work.

So how can we balance our habitat needs with those of wildlife when we're shopping for homes and landscaping solutions? Part of the answer is choosing "conservation-friendly development." This approach creates communities, homes and landscapes that "build with nature," and it's beginning to catch on in Missouri.

Here's how you can use your shopping power to reward and encourage choices that leave room for wildlife.

EXPLORE HABITAT-FRIENDLY BUILDING AND LANDSCAPING

It's hard to make "conservation-friendly" consumer choices when you're not sure what they are and how they're different from "traditional" building and landscaping.

A good place to learn about building-with-nature designs, techniques and systems is at one of the Department's newer facilities, such as Twin Pines Conservation Education Center in Winona or the new Kansas City Regional Office.

In general, the Department is moving toward these practices on all new facilities:

- Working within landscape contours to preserve the building site's plants, soil and water
- Positioning buildings within existing trees to maximize passive solar gain and take advantage of natural shade and cooling
- Managing stormwater runoff with techniques such as native-plant rain gardens. Like bio-facilities, they soak up and filter water before it reaches storm drains.
- Landscaping with native plants, which need less water and provide better wildlife habitat
- Using energy-efficient construction, materials and appliances, including "cool roofs" that reflect up to 70 percent of the sun's rays, resulting in less heat transfer and saving up to 40 percent in energy costs

Twin Pines
Conservation
Education Center
in Winona
features flooring
made from
wood harvested
in Missouri.

- Using recycled and locally sourced materials. For example, Twin Pines Conservation Education Center has flooring made from wood harvested in Missouri as well as structural insulated panels made in Taos, Mo.

SEEK AND SUPPORT WILDLIFE-FRIENDLY POLICIES

If you can choose where you live, seek communities with policies that protect open space.

Good land-use policies can make a big difference in your quality of life over time. Without them, your property's "great views and lots of wildlife" may disappear in a few short years.

The City of Weldon Spring is a community that is making a firm commitment to protecting open space. In March 2009, the city's Board of Aldermen approved changes to the zoning and subdivision sections of the city's municipal code to promote the preservation of the city's open space and southern bluff-top views.

"This is a major achievement," says Hilary Murphy, Weldon Spring's consulting planner, "because it's often local ordinances that keep conservation-friendly development from happening."

She emphasizes that the process began with the city's comprehensive plan, which the local community helped develop. "Since Weldon Spring was formed, there's been a value for nature. During the comprehensive plan update, we heard from the community that preserving nature and natural values was important to them."

Weldon Spring's Planning Commission Chair Mike Mullins, and Mayor Don Licklider, emphasize that providing for the full scope of the community's values and needs was important. "This type of development will allow landowners to develop and build, but still preserve the ecosystems there. We don't



Building With Nature

In their August 2008 article titled *Building With Nature*, Department urban foresters Perry Eckhardt and Wendy Sangster explain what conservation-friendly development is and how it works. Basically, it incorporates sustainable design, low-impact development and green building to create living space that is more in harmony with nature. Read it at www.mdc.mo.gov/node/8988.



want to take away people's rights to develop. It is possible to allow building and still preserve natural values," Mullins says.

Ordinances such as Weldon Spring's also assure property buyers that their open views and landscape amenities, such as wildlife habitat, will be protected for the future.

When you're shopping for a new neighborhood, check the town's website and contact the city administrator. He or she can tell you whether the town has a conservation-friendly development ordinance or plans to develop one.

TARGET YOUR FAVORITE NEIGHBORHOODS AND SURF THE 'NET

At first glance, the term "conservation-friendly development" seems to be just another way of saying "green building." But there is a difference. It's entirely possible to have a development full of energy-efficient houses that also consume lots of wildlife habitat and increase stormwater runoff.

Conservation-friendly development complements green building by grouping structures in a way that leaves open space for wildlife. An added bonus of clustering buildings within a development is preserving the "view shed" for residents and community members.

Bill and Paula Frazier had this idea in mind when they approached Brian Burton, who developed Oakbrook, "a community built around nature" in the greater Kansas City area.

"We were Brian's first buyer," Bill says. "I feel we got the best lot because it backs up to 35 acres of timber that will never be developed. I grew up hunting and fishing, and I've been a lifelong conservationist. We've installed trail cameras and really enjoy watching the animals."

Even though Bill and Paula knew the Burtons, it still took them awhile to find their dream location. "We just didn't want to live in a populated area. We drove around and looked at lots for sale. If you find an area you like, just drive around."

The MDC Discovery Center in Kansas City demonstrates many "building with nature" principles such as water and energy conservation and landscaping with native plants.



Urban gardens in Kansas City use native plantings to manage stormwater runoff. The native plants soak up and filter water before it reaches storm drains.

Aside from cruising your favorite communities and neighborhoods, you can also find “building with nature” choices by searching the Internet. Many Realtors, developers and builders are now identifying themselves as specializing in “green” or “low impact” real estate. To back up their claims, they’re earning “green” designations through local groups, such as the Tri-Lakes Board of Realtors’ “REALTORS for Green Living,” and regional chapters of the U.S. Green Building Council. They use these designations in their online advertising to attract shoppers interested in energy-efficient, low-impact and sustainable designs.

RESEARCH FINANCING PROGRAMS AND CHOOSE YOUR LENDER CAREFULLY

While you’re online, check out “green” mortgages and home improvement programs. “These programs help buyers finance energy efficient or sustainable landscape improvements, but a lot of lenders don’t know about them,” says Ron Kaufman, a mortgage loan specialist with Bank of America in St. Louis.

Grow Native! Helps You Build With Nature

Visit www.GrowNative.org for ...

- Wildlife-friendly landscape designs
- How-to, including hundreds of landscape-worthy native plant photos and descriptions
- Native-plant landscaping workshops
- Businesses that sell native plants
- Landscape architects, designers and contractors that specialize in native plant designs/installations.

“You, as a consumer, have to know about these programs because your lender may not know they have them.”

Ron mentions a Department of Housing and Urban Development website that lists all the energy efficiency financing and rebates. You can find it at <http://go.usa.gov/TYf>.

When it comes to the future of energy-efficient and conservation-friendly housing choices, Ron, who also sits on a homebuilders’ association green building executive board, is optimistic. “The best thing we have going for us is the continuous updating of the building code, which gets ‘greener’ every year. Hopefully that alone will drive awareness with builders and thus communication to consumers.”

LIVE IN TOWN, LANDSCAPE WITH NATIVES

Building with nature helps you minimize the impact of development pressure on dwindling wildlife habitat, especially if your dream is to live in a suburban development or small acreage. But if you want to keep your “ecological footprint” as small as possible, consider a house in an older city neighborhood and make it wildlife-friendly with native plants.

Retired Department publications editor Bernadette Dryden made this choice several years ago.

“On the advice of a financial planner, I chose a house in this older Columbia neighborhood close to the university. It’s a solid investment and it supports the things I care about—being able to walk downtown for events, gardening, privacy and having access to interesting neighbors.”

An avid gardener and cook, Bernadette’s landscape feeds her horticultural and culinary passions. Her sunny front yard features a tidy,

straw-mulched vegetable garden among lots of native plants, including hickories, ninebark, Virginia creeper, blazing star and river oats.

"The natives have grown here naturally for thousands of years. They stand up to the climate better than nonnatives do," says Bernadette.

Her native plants and water features also attract wildlife. "I'm always seeing skinks, snakes, rabbits, deer, foxes and lots of birds," she says. "In my water garden, American toads and southern leopard frogs lay their eggs all spring, and then I see them hopping around in the garden, eating bugs."

What advice does she have for others who want to landscape with native plants?

"Arm yourself with the Department's publications, such as *Tried and True: Native Plants for Your Yard*. Talk to the growers—you can find a

list of them on the Grow Native website. They're your best source of knowledge on how to grow natives successfully."

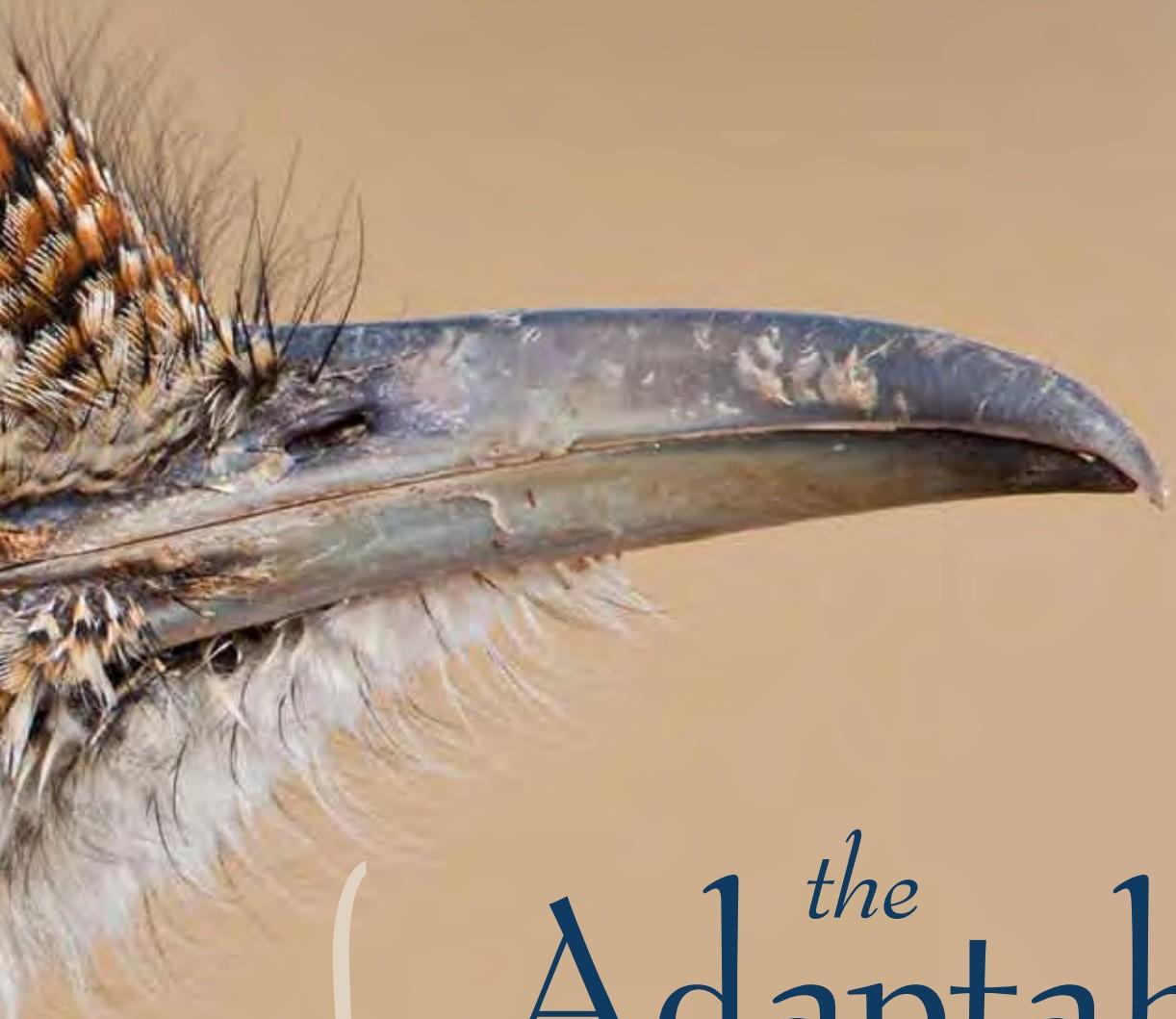
REMEMBER ...

We have the power to create the world we want to live in. The Internet makes it easier than ever before to keep in touch with trends. A simple Web search can tell us what's going on in local government. It can also show us who's creating the kinds of real estate and landscaping choices that meet our needs without sacrificing our values. The regulatory and market trend toward conservation-friendly development indicates that Missouri's communities *can* be healthier for wildlife and people far into the future. We guarantee that they will every time we encourage better land-use policies and buy into building with nature. ▲

Bernadette Dryden's backyard garden uses native plants and water features to attract wildlife.







{ ^{the} Adaptable Roadrunner } *An up-close look at one of our most unique birds.*

by ANDY FORBES • photos by NOPPADOL PAOTHONG

I'LL NEVER FORGET THE FIRST time I saw a greater roadrunner. I was driving to Texas to start graduate school when a long-tailed bird standing near the side of the highway caught my attention—there was no mistaking it. Since then I've seen quite a few more, but their unique appearance and behavior never fails to fascinate me.

Many people are surprised to hear that we have greater roadrunners in Missouri. Indeed, the heart of their range lies in the southwestern United States, but this adaptable species has found a way to expand its range and use a wide variety of habitats, from desert scrub to pine woodlands, even suburban habitats. Roadrunners are a fairly recent arrival to Missouri (the first documented sighting was in 1956) and are predominantly found in the rugged, rocky glades and open woodlands of the Ozarks. They are most common in our southwestern counties, although they have been seen as far north as Jefferson City. In Missouri and other states in the northern part of their range, roadrunners are vulnerable to severe winter weather, especially during years where prolonged heavy snow cover prevents them from getting enough food. As a result, populations fluctuate from year to year, and birds can become scarce in years following harsh winters.

Greater roadrunners are a member of the cuckoo family that evolved to lead a predominantly terrestrial, or ground-based, lifestyle (their scientific genus, *Geococcyx*, translates to “Land Cuckoo”). They are a streaked, grayish-brown color overall, stand about as tall as a chicken, and they have a sleek, long-tailed appearance. If you get a really good look at one, you may notice a bare strip of blue and orange skin behind their eyes. They prefer to run rather than take flight, and can run up to 18 miles per hour, using their long tails like a rudder to help quickly change directions. Most of the flying they do involves a quick jump into brush when threatened, or brief glides between perches and the ground.

A Bird of Legend

The personality of the greater roadrunner has earned it a variety of colorful nicknames, including snake killer, war bird, cock of the desert and medicine bird. Some pioneers believed that following a roadrunner would lead them back to



Some pioneers believed that following a roadrunner would lead them back to the trail should they lose their way.



the trail should they lose their way. In Mexico, the bird is sometimes known as “paisano” which means “friend,” and the roadrunner replaces the stork in some folklore as the deliverer of newborn babies. The roadrunner also played a prominent role in Native American cultures. Roadrunners are depicted in ancient drawings on cliff/canyon walls in Texas and New Mexico. The symbol “X,” which refers to the roadrunners’ unique footprint, was used in a variety of ways by members of the Hopi and Pueblo tribes to ward off evil spirits.



Greater roadrunners are most common in Missouri's southwestern counties.

A Fleet-Footed Hunter

Roadrunners are opportunistic hunters of small animals and have adapted to take advantage of human-altered habitats. Insects make up the bulk of the roadrunner's diet, especially grasshoppers, beetles and other large insects. Small lizards and snakes are also a favorite food. However, roadrunners will eat just about anything small enough for them to catch and overpower. They have been known to eat birds as large as cardinals, mice, rats, gophers, bats, ground squirrels and young rabbits. They also

Nesting

Roadrunners maintain a long-term pair bond, and both parents play major roles in defending territories, incubating eggs and caring for young. They will hunt together and renew their bond every year with an elaborate courtship display, which involves cooing, bowing, dancing and the exchange of food and nest material. Construction of their messy, twiggy nests is a shared, and divided, effort—the male gathers the twigs and the female puts the nest together. The female signals the male with a special call when she needs more material. Nests are typically built in a small tree or shrub. Clutches of three to six eggs are incubated as soon as the first egg is laid, resulting in nestlings of varying sizes. Young roadrunners grow fast and can leave the nest when they are only 14 days old, about twice as fast as some other similarly sized species. In years of abundant food, they may raise two broods in a year.



A greater roadrunner catches a house sparrow.

occasionally feed on fruit and berries, as well as carrion when available.

Roadrunners hunt in a deliberate, tactical manner. They covertly survey their surroundings and adapt their tactics based upon the opportunities that present themselves. Grasshoppers and other insects are grabbed from tall grass and other vegetation. Larger prey are captured by stealthily (and sometimes nonchalantly) stalking up close, then pouncing with a quick burst of speed, grabbing it with their bills.

The tales of their antics while capturing food are legendary. Early ornithologists collecting small birds in the southwestern U.S. would often have to race local roadrunners to pick up specimens that they had just shot, a race that the roadrunners often won. They also have learned, as have many hawks, that bird feeders are an easy source of food and will occasionally stalk and capture unwary birds at feeders, even hummingbirds.

The intimidating rattlesnake is also on the menu for roadrunners, which has contributed to their legend. One myth about roadrunners is that they will sneak up on a sleeping rattlesnake and build a wall around it using cactus spines. Upon awakening, the snake goes crazy and either bites itself to death or is impaled by the spines. While this tale has never been verified, equally impressive feats of strategy and skill have been observed when roadrunners cooperatively attack rattlesnakes, with one bird distracting the serpent, while the other creeps up and pins the snake's head. The snake is dispatched by thrashing its head against a rock or other hard surface.

Defiant Prey

Roadrunners are usually fast and clever enough to avoid predators, although they are occasionally taken by raptors and mammals (including the "wily" coyote). They have been observed standing up to an attacking hawk, flashing their wings and spreading their tail feathers out in an attempt to intimidate the raptor. Observers have even remarked that the birds seem to enjoy tormenting potential predators. One anecdote from New Mexico in 1892 described a pair of roadrunners that would appear at the same time every day to drink from a pool at a mine shaft. A dog owned by a worker there would eagerly

await them. The hound would chase the birds as soon as they appeared, but the swift and agile roadrunners had no trouble staying out of reach, even stopping occasionally to drink from the pool during the heat of the chase.

Roadrunners do not migrate and can be seen any time of the year. They can turn up just about any place in the southwestern Ozarks, but are nowhere common, and many longtime Missouri birders still have yet to add them to their checklists. Driving gravel roads in our southwestern counties that are surrounded by dry, rocky woodlands, glades or pastures can be a good way to find them. The Glade Top Trail in Taney and Ozark counties is a good place to see them (as well as some beautiful views), and they can also be found in and around Caney Mountain Conservation Area in Ozark County and Ruth and Paul Henning Conservation Area in Taney and Stone counties. If you're lucky enough to spot one, take the time to watch if you can—I guarantee you'll find them every bit as fascinating as our pioneers did! ▲



Sunbathing

Roadrunners, like many other birds, will sunbathe, sometimes for hours at a time—especially in the early morning. They turn their backs to the sun, droop their wings and raise their back feathers, exposing the dark skin underneath. During winter they sunbathe more frequently, but they will occasionally sunbathe during summer as well. The obvious reason for this is that it feels good, and it helps them stay warm. Ornithologists also speculate that it may help birds rid themselves of parasites, make their feathers easier to preen and help metabolize vitamin D.



Bowfin

This Mississippi River fish has a fascinating list of traits and an amusing list of nicknames.



WHILE THEY HAVE to compete against some bona fide oddballs like the paddlefish and gar, bowfin still make a strong case for the title of strangest fish in Missouri. Bowfin have often been described as living fossils. They are the only surviving species of a once widespread group of primitive fishes called Amiiformes. Armed with

a set of unusual adaptations and behaviors, bowfins have survived for more than 150 million years, through periods of untold change and turbulence.

Bowfin (*Amia calva*) are stout, cylindrical fish. The largest bowfin ever caught in Missouri was 19 pounds, although 1 to 5 pounds is a normal adult weight. Like most other Missouri fish, bowfin propel themselves through the water with their tail fin, but they can also swim by moving their extra-long dorsal fin in an undulating motion. Using this method, bowfin can stop on a dime and swim backward as easily as they can forward. They have a primitive skeleton with a double skull (a cartilage one inside a bony one) and their wide mouth, full of teeth, has earned them the nickname "grinner." Perhaps this fish's most unusual adaptation is its ability to breathe air. Bowfin have a swim bladder that functions as a primitive lung, which they use to survive in low oxygen waters. This ability has led to some speculation that bowfin estivate (become dormant underground during a drought). Several studies have shown that, while bowfin are probably not capable of long-term estivation, they can survive up to five days out of water.

Bowfin live in the sluggish backwaters and tributaries of the Mississippi River. They prefer clear water with lots of vegetation. When ready to spawn, the male bowfin builds a nest in the weeds. At this time his mouth, tongue and fins turn vivid green. The male cares for the eggs and protects the school of young for several weeks. Males have even been known to try to run off anglers if they wade too close to their nests.

Despite their impressive traits, bowfin have an image problem. For decades they have been persecuted as ugly, voracious predators. They do eat much of the same prey as most game fish, but have never been shown to be a cause of sport fish decline. Bowfin also suffer from a new phenomenon: snakehead-phobia (for more information on the invasive northern snakehead fish, visit www.invasive-speciesinfo.gov/aquatics/snakehead.shtml). While the thought of snakehead fish in our waters is a scary one, bowfin should not be punished for the offense. Though similar in appearance, the two fish can be easily distinguished by a quick look at the anal fin. The snakehead's is very long and the bowfin's is very short.

There is probably no other fish that has quite the collection of colorful local names that the bowfin does. Besides "grinner," as mentioned above, beaver fish, dog fish, cabbage pike, choupique, bugle mouth, cypress trout, grindle, cotton fish and lawyer are just a few of its other aliases. Call it what you want, the bowfin is a strange and magnificent part of Missouri's aquatic community.

—by Sarah Peper, photos by Noppadol Paothong







Wayne Helton

June is a great time to enjoy prairie wildflowers and colorful birds at this northwest Missouri area.



THE WAYNE HELTON Memorial Wildlife Area near Bethany in Harrison County is a living monument to Missouri's tallgrass prairies and to Wayne Helton, who served as the conservation agent for Caldwell and Daviess counties from 1941 until 1965. The Department established the area in 1969 with the purchase of 440 acres from Helton's widow, Nina Pauline Helton. The purchase of several additional tracts since 1969 has increased the area to its current size of 2,560 acres.

This large, diverse area features old fields, forests, cropland and two small wetlands. The area's northwest corner includes the Helton Prairie Natural Area, one of north Missouri's best examples of native, deep-soil tallgrass prairie. Nearly 200 varieties of native prairie plants have been identified on the 30-acre natural area.

At Helton Prairie you will see what many early European settlers found in Missouri north of the Missouri River. The area supports plants characteristic of upland prairies (for example, rattlesnake master, pale purple coneflower, prairie blazing star, rigid goldenrod, lead plant, compass plant and white prairie clover) but also an abundance of more moisture-loving prairie plants, such as bunch flower, tall coreopsis, sweet coneflower, closed gentian, Culver's root and water parsnip.

While you're enjoying the wildflowers, keep an eye out for a host of native insects that help shape the prairie community. From ants to butterflies, myriad insect species play integral roles in the ecology of our remnant prairies.

In addition to prairie wildflowers and native insects, you will also see and hear a great variety of birds, including indigo bunting, dickcissel, horned lark, sedge wren, rose-breasted grosbeak, blue grosbeak, orchard oriole, eastern bluebird, yellow-breasted chat and summer tanager.

Because of the area's size and diversity, the Department manages it for a wide range of game and nongame wildlife. Management activities include farming, prescribed burning, edge feathering (cutting down and leaving trees to create a shrub-like transition between crops or pastures and woodlots) and food plots.

To get to the Wayne Helton Memorial Wildlife Area, go nine miles east of Bethany on Highway 136 to Route CC. Turn south (right) on Route CC, and go three miles to the Area. To plan your visit and download the area's brochure and map, see the Web page listed below.

—Bonnie Chasteen, photo by David Stonner



Recreation opportunities: Bird watching, wildflower viewing, camping, fishing, hunting and trapping with a special use permit.

Unique features: The area features the 30-acre Helton Prairie Natural Area, one of the last deep-soil tallgrass prairie remnants in Missouri.

For More Information

Call 660-646-6122 or visit www.mdc.mo.gov/a6902.



Hunting and Fishing Calendar

FISHING	OPEN	CLOSE
Black Bass (certain Ozark streams, see the <i>Wildlife Code</i>)	5/28/11	2/29/12
impoundments and other streams year-round		
Bullfrogs and Green Frogs	Sunset	Midnight
	6/30/11	10/31/11
Nongame Fish Gigging	9/15/11	1/31/12
Nongame Fish Snagging	3/15/11	5/15/11
Paddlefish on the Miss. River	3/15/11	5/15/11
Trout Parks	3/01/11	10/31/11
HUNTING	OPEN	CLOSE
Coyote	5/09/11	3/31/12
Deer		
Firearms: November	11/12/11	TBA
Furbearers	11/15/11	1/31/12
Groundhog	5/09/11	12/15/11
Pheasant		
Youth (North Zone only)	10/29/11	10/30/11
North Zone	11/1/11	1/15/12
Southeast Zone	12/01/11	12/12/11
Quail	11/1/11	1/15/12
Youth	10/29/11	10/30/11
Rabbits	10/1/11	2/15/12
Squirrels	5/28/11	2/15/12
Turkey		
Fall	10/01/11	10/31/11
Waterfowl	please see the <i>Waterfowl Hunting Digest</i> or see www.MissouriConservation.org/7573	
TRAPPING	OPEN	CLOSE
Beavers & Nutria	11/15/11	3/31/12
Furbearers	11/15/11	1/31/12
Otters & Muskrats	11/15/11	2/20/12

For complete information about seasons, limits, methods and restrictions, consult the *Wildlife Code* or the current summaries of *Missouri Hunting and Trapping Regulations* and *Missouri Fishing Regulations*, *The Spring Turkey Hunting Regulations and Information*, *the Fall Deer and Turkey Hunting Regulations and Information*, *the Waterfowl Hunting Digest* and the *Migratory Bird Hunting Digest*. For more information visit www.MissouriConservation.org/8707 or permit vendors.



"I don't think we can GO 35 miles an hour."

Contributors

BONNIE CHASTEE is an editor in the Department's Outreach and Education Division. Aside from editing our Web content, she writes the *Conservationist's "Places to Go"* department and the occasional feature about native-plant landscaping and private land conservation.



ANDY FORBES is a former ornithologist with MDC. He now works with the Division of Bird Habitat Conservation of the U.S. Fish and Wildlife Service in Minnesota. He enjoys all things outdoors—especially birding and fishing.



PAUL HAGEY, who lived in the Missouri Ozarks for a year after receiving his M.A. in journalism from the University of Missouri, is a natural history writer. He has a passion for illustrating the interconnectedness of life via the natural world in the articles he writes, and he looks forward to managing his own land someday.

WHAT IS IT?

Least bittern

On the back cover and right is a juvenile least bittern by Noppadol Paothong. During the summer, least bitterns frequent cattail and river bulrush marshes. Nests are frequently constructed in cattails, river bulrushes, nutsedges and buttonbushes in deepwater sites. Detecting them is easily done at dawn and dusk by listening for their soft calls, *coo-coo-coo-COO-COO-COO-coo-coo*. Seeing them is a matter of patience, unless you can canoe or wade through the wetland area where you heard them. Usually if you wait and frequently scan above the cattails of a marsh, you will see one fly low over the marsh and disappear into the vegetation again. Public areas that are excellent places to watch for least bitterns are Eagle Bluffs, Schell-Osage, Fountain Grove, Ted Shanks and Marais Temps Clair conservation areas and Mingo, Squaw Creek, Swan Lake and Mark Twain national wildlife refuges. This juvenile was photographed on a June morning at Squaw Creek National Wildlife Refuge. To learn more about birding in Missouri, visit www.mdc.mo.gov/node/235. The Conservation Department also sells *Birds In Missouri*, a beautiful illustrated book featuring 354 birds. It includes range maps and seasonal abundance graphs. Seventeen two-page habitat scenes portray Missouri's diverse natural and urban landscapes. It costs \$30 plus sales tax and shipping and handling. To order, call toll free 877-521-8632 or visit www.mdc.natureshop.com.



AGENT NOTES

The life of an urban conservation agent.

AS A CONSERVATION agent assigned to an urban county, I'm often asked what conservation agents do in the cities because traditional hunting and fishing activity is usually associated with rural counties. However, there are numerous opportunities for hunting and fishing within an urban area. Due to a successful urban stocking program, lots of communities have lakes or rivers that have high fishing pressure. Deer populations in some urban areas have prompted many cities to modify their ordinances

to allow archery hunting within city limits in an effort to control deer numbers. In addition, there are numerous conservation areas and public land in or around urban areas. Conservation agents spend a significant amount of time performing law enforcement duties on public land to curtail vandalism, littering, drug use or trafficking, indiscriminate target shooting and vehicles operating off the roadway.

A conservation agent's duties also include a variety of school programs, hunter education programs, and hunting and fishing clinics. We attend public meetings on topics from catfish regulations to new waterfowl zone boundaries, and have consistent contact with the media. Conservation agents are the local representative for the Department, and every agent strives to provide enforcement and programs appropriate to his or her county.



Doug Yeager is the conservation agent for Platte County. If you would like to contact the agent for your county, phone your regional Conservation office listed on Page 3.

WHAT IS IT?

Our photographers have been busy exploring the intricacies of the Missouri outdoors. See if you can guess this month's natural wonder. The answer is revealed on the inside of this back cover.



Subscribe online

www.MissouriConservation.org/15287

Free to Missouri households

